

<b>COURSE TITLE</b>	<b>.NET TECHNOLOGIES</b>
<b>COURSE CODE</b>	<b>01CT1518</b>
<b>COURSE CREDITS</b>	<b>4</b>

**Objective:**

- 1 .Net Technologies are blend of technologies supported by Microsoft .Net Framework, that allows user to create various applications. Students will be able to work with various technologies provided by Microsoft .NET platform
- 2 .Net Technologies are blend of technologies supported by Microsoft .Net Framework, that allows user to create various applications. Students will be able to work with various technologies provided by Microsoft .NET platform.

**Course Outcomes:** After completion of this course, student will be able to:

- 1 Understand the use of C# basics, Objects and Types, Inheritance and .NET framework developed by Microsoft (Understand).
- 2 Develop and implement applications with C# (Apply).
- 3 Analyze the Component Services, Threading, Remoting, Windows services, web services (Analyze).
- 4 Design the functional web application using the concepts of .NET, various server controls, State management, MVC Architecture and application security (Apply).
- 5 Design, develop and deploy web application (Create).

**Pre-requisite of course:** Object oriented concepts, Programming fundamentals

**Teaching and Examination Scheme**

<b>Theory Hours</b>	<b>Tutorial Hours</b>	<b>Practical Hours</b>	<b>ESE</b>	<b>IA</b>	<b>CSE</b>	<b>Viva</b>	<b>Term Work</b>
3	0	2	50	30	20	25	25

<b>Contents : Unit</b>	<b>Topics</b>	<b>Contact Hours</b>
1	<b>Introduction to .Net Framework</b> Introduction to .NET Framework Architecture, Program Execution in .NET, CLR Structure , MSIL, CLS, CTS, Namespaces , Assemblies the common Language Implementation, Creating strong named assemblies , Garbage Collection	2
2	<b>The Basics and Console Applications in C#</b> C data types, declaring variables and constants, Type, Conversion, Boxing, Unboxing, Array, Structure, String Manipulation, String Builder, Decision making statements, Conditional Loops, Switch Case, Name Spaces - Constructor and Destructors, Function Overloading & Inheritance, Operator Overloading, when to use Console Applications - Generating Console Output, Processing Console Input	4

<b>Contents : Unit</b>	<b>Topics</b>	<b>Contact Hours</b>
3	<b>Advance C#</b> Attributes, Reflection, Delegates, Events, Threading, Collections	3
4	<b>Building GUI with C#</b> Working with common form controls, Visual Inheritance, Event Handling	4
5	<b>Working with SQL server</b> Introduction to SQL server, Different types of queries, SQL index, SQL views, stored procedure, cursor	4
6	<b>ASP.NET</b> Introduction to ASP.NET., Working with Web and HTML Controls,, Using Rich Server Controls, Login controls, Overview of ASP.NET Validation Controls, Using the Simple Validations, Using the Complex Validators Accessing, Data using ADO.NET, Using the Complex Validators Accessing Data using ADO.NET, Configuration Overview.	5
7	<b>Managing State</b> Preserving State in Web Applications, Page-Level State, Using Cookies to Preserve State, ASP.NET Session State, Storing Objects in Session State, Configuring Session State, Setting Up an Out-of-Process State Server, Storing Session State in SQL Server, Using Cookie less Session IDs, Application State Using the Data List and Repeater Controls.	5
8	<b>ASP.NET MVC</b> Controller, Model, View, Layout, Partial Views, Razor Language, jQuery Ajax, Entity Framework, routing mechanism, Web API	8
9	<b>Introduction to .NET Core</b> Controllers, views, models, layout, Introduction to entity framework core, Routing, Web api, Dependency injection	5
10	<b>Deployment of web app</b> Deploy web app locally, accessing in local environment from multiple devices	2
<b>Total Hours</b>		<b>42</b>

### Suggested List of Experiments:

<b>Contents : Unit</b>	<b>Topics</b>	<b>Contact Hours</b>
1	<b>Experiments 1</b> Create a windows form with the following controls Textbox, Radio button, Check box, Command Button	2
2	<b>Experiments 2</b> Write a program for Menu option.	2
3	<b>Experiments 3</b> Create a program to connect with database and manipulate the records in the database using ADO .NET	2

### Suggested List of Experiments:

Contents : Unit	Topics	Contact Hours
4	<b>Experiments 4</b> Create a program to implement the concepts of OOPS for creating class, inheritance	2
5	<b>Experiments 5</b> Create a program to perform input validation using procedure.	2
6	<b>Experiments 6</b> Write a program to open a file and using I/O operations write contents into a file and read the contents from the file.	2
7	<b>Experiments 7</b> Create a window form using HTML controls.	2
8	<b>Experiments 8</b> Create a program to perform validation using validation controls	2
9	<b>Experiments 9</b> Create a program in ASP .NET to connect with the database using ADODB connectivity and manipulate the records.	2
10	<b>Experiments 10</b> Write a program to store the employee details using class and methods in C# .NET	2
11	<b>Experiments 11</b> Write a program to Handle Exceptions	2
12	<b>Experiments 12</b> Write a program to create a form with Basic control in C#. NET.	2
13	<b>Experiments 13</b> Write a API which can be consumed from any other languages I.e. Android / iOS / php / java etc.	2
14	<b>Experiments 14</b> Write a program to generate daily different offers to attract customers for online shopping portal.	2
<b>Total Hours</b>		<b>28</b>

### Textbook :

- 1 Professional C# .Net, Christian Nagel, Wrox Publication, 2021
- 2 ASP.NET Complete Reference, Matthew MacDonald, McGraw Hill India, 2002

### References:

- 1 Object-Oriented Programming in C#, Object-Oriented Programming in C#, Kurt Nomark, Aalborg University, 2010
- 2 C# The Basics, C# The Basics, Vijay Mukhi, BPB Publications, 2003

### Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery

<b>Remember / Knowledge</b>	<b>Understand</b>	<b>Apply</b>	<b>Analyze</b>	<b>Evaluate</b>	<b>Higher order Thinking / Creative</b>
10.00	20.00	25.00	25.00	10.00	10.00

**Instructional Method:**

- 1 The internal evaluation will be done on the basis of continuous evaluation of students in the laboratory and class-room.
- 2 Practical examination will be conducted at the end of the semester for evaluation of performance of students in laboratory
- 3 Students may use supplementary resources such as online videos, NPTEL videos, e-courses, Virtual Laboratory, etc.
- 4 The course delivery method will depend upon the requirement of content and need of the students. The teacher in addition to conventional teaching method (Chalk and Talk) may use any of the tools such as demonstration, role play, Quiz, brainstorming, Flipped class, Project based learning, Collaborative learning, MOOCs etc. for effective teaching.

**Supplementary Resources:**

- 1 <http://www.c-sharpcorner.com>
- 2 <http://www.csharp-help.com/index.html>
- 3 <http://www.codeproject.com>